

Brandon M. Serna

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Education

California State University Long Beach
Bachelor of Science, Electrical Engineering

Dec 2020
Cumulative GPA: 3.07

Skills

- Programming Language: C++, VHDL, Arduino, AVR Studio 4, Python
- Laboratory and System Modeling: NI LabVIEW, Simulink, EagleCAD, MATLAB, PSpice, LTSpice

Projects

Aircraft Pitch Control System

Aug 2020 – Dec 2020

- Modeled and simulated the governing motions of a commercial aircraft using MATLAB and Simulink; Derived 3 linear longitudinal equations of motion using data taken from Boeing
- Designed and simulated a series of feedback controllers using state-space and PID design methods that improved the overall performance of the aircraft due to a step response by 50%
- Developed an app through MATLAB that allowed a user to alter the parameters of 4 feedback controllers and observe the resulting step response and performance of the aircraft

Jenga Tower Builder

Jan 2020 – May 2020

- Collaborated with a team of 2 engineers to design, assemble, and test an Arduino enabled, smartphone-controlled robot to play a competitive game of Jenga against rival robots
- Designed and fabricated a custom PCB Shield through EagleCAD to control 4 servo motors through PWM and Arduino telemetry communications, increasing the power efficiency of our robot
- Performed and evaluated trade-off studies regarding servo motors and motion sensors that resulted in reducing the weight of our robot by 15%, allowing it to lift a 10g Jenga block

Work Experience

Tutor

CSULB Department of Engineering, Long Beach, CA

Sept 2019 – May 2020

- Oversaw the development of problem-solving and study skills for students, improving their grades by 15%
- Produced and taught supplemental material which motivated students to excel further in their classes
- Facilitated group and one-on-one study sessions while encouraging collaboration and study habits

Sales Associate

Prana Living Apparel, El Segundo, CA

May 2019 – Jan 2020

- Processed incoming product flow in the store accurately and efficiently, which increased store profitability
- Provide exceptional customer service by responding to consumer questions or issues regarding product
- Maintained store appearance standards for visual merchandising, cleanliness, and safety for customers